REMARKS

Introductory Comments

Claims 1-5, 7-16 and 19-31 are pending in the present application. Claims 1, 10-12, 15, 16, 21, and 26-29 have been amended. Claims 6, 17, and 18 have been cancelled. Reconsideration of the application is respectfully requested.

35 U.S.C. § 102 Rejections

Claims 1-3, 5, 15, 16, 18-20, 24, and 25 stand rejected under 35 U.S.C. 102(e) as being allegedly anticipated by U.S. Patent No. 6,540,321 to Hirano et al. ("Hirano"). This ground of rejection has been overcome for claims 1-3, 5, 15, 16, 18-20, and 24 by the amendments to claims 1 and 15. This ground of rejection is respectfully traversed with respect to claim 25 as Hirano fails to disclose each and every one of the claimed limitations.

Independent claim 1 has been amended to recite that at least a portion of the semipermeable membrane is angled other than parallel with respect to an operating level of the liquid ink within the vented ink reservoir. In this manner, gaseous diffusion through the semipermeable membrane is permitted, while liquid diffusion through the semipermeable membrane is inhibited, even when liquid ink is in direct contact with the semipermeable membrane. Hirano fails to disclose a vented ink reservoir that that includes an angled semipermeable membrane that provides for gaseous diffusion between the environment external to the vented ink reservoir and the internal volume of the vented ink reservoir when liquid ink is in direct contact with the semipermeable membrane. Most notably, the gas-permeable membrane of Hirano is parallel to the operating level of ink within the reservoir so that as liquid ink contacts the membrane, the entire surface of the membrane is blocked by the liquid ink, thereby completely forestalling gaseous diffusion across the membrane. In fact, the embodiments of Hirano are expressly designed so that the membrane is parallel to the operating level of liquid ink. Thus, claim 1 is patentably distinct from Hirano for at least this reason.

Independent claim 15 is directed to a method of regulating the pressure between an interior volume of an ink container and an external environment. Claim 15 has been amended to recite that the regulating act includes facilitating gaseous diffusion and inhibiting liquid diffusion across the semipermeable membrane at least when the semipermeable membrane is in contact with liquid ink. As discussed directly above for claim 1, Hirano fails to disclose a device or method for concurrently facilitating gaseous diffusion and inhibiting liquid diffusion across the semipermeable membrane at least when the semipermeable membrane is in contact with liquid ink. All of the embodiments of Hirano position the gas-permeable membrane parallel to the operating level of ink within the ink reservoir. In each embodiment of Hirano, a method of facilitating gaseous diffusion and inhibiting liquid diffusion across the semipermeable membrane at least when the semipermeable membrane is in contact with liquid ink would be impossible as contact with the liquid ink completely inhibits any gaseous diffusion through the membrane. Thus, claim 15 is patentably distinct from Hirano for at least this reason.

Independent claims 25 is directed to a method of mounting a porous substrate, concurrently inhibiting liquid diffusion therethrough and enabling gaseous diffusion therethrough, to a nonporous substrate concurrently inhibiting gaseous and liquid diffusion therethrough, the method comprising the steps of: (a) positioning a porous substrate adjacent to a nonporous substrate; (b) moving a pressure source adjacent to the porous substrate to sandwich the porous substrate between the pressure source and the nonporous substrate; (c) applying thermal energy in a pulse adjacent to the porous substrate to melt a portion of the nonporous substrate; and (d) removing the thermal energy source to solidify the portion of the nonporous substrate, interlocking the porous substrate and nonporous substrate to inhibit fluid communication therebetween, wherein the porous substrate facilitates gaseous diffusion therethrough, but inhibits liquid diffusion therethrough. The Office action alleges that Hirano inherently teaches each of the limitations of claim 25, however, this conclusion is in error.

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534 (Fed. Cir. 1993) (emphasis added) (reversed rejection because inherency was based on what would result due to optimization of conditions, not what was necessarily present in the prior art). See M.P.E.P. §2112. "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. *In re Oelrich*, 666 F.2d 578, 581-82 (C.C.P.A. 1981). See M.P.E.P. §2112. The Office action clearly failed to establish that the steps of claim 25 are necessarily present in the embodiments described in Hirano, and that it would be so recognized by persons of ordinary skill. Moreover, inherency may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.' " *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999) (citations omitted). "In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990). In the instant case, the Examiner has failed to provide a basis in fact for the conclusions that the method claims are anticipated by the inherent disclosure of Hirano and, therefore, this ground of rejection is improper.

In light of the foregoing, it is respectfully submitted that claims 1, 15, and 25 are in condition for allowance as each claim is patentably distinct from Hirano. Moreover, each of the claims that depends from claims 1, 15, or 25 is in condition for allowance as each claim is patentably distinct from Hirano for at least the reasons articulated for claims 1, 15, and 25. Reconsideration and withdrawal of the rejection of record for claims 1-3, 5, 15, 16, 19, 20, 24, and 25 are respectfully requested.

Claims 1-3, 5, 6, 8, 13-21, 25, and 26 stand rejected under 35 U.S.C. 102(b) as being allegedly anticipated by U.S. Patent No. 6,000,788 to Iida et al. ("Iida"). This ground of rejection is respectfully traversed.

Independent claim 1 is directed to a a vented ink reservoir for containing a liquid ink therein, the vented ink reservoir defining an internal volume occupied at least in part by a semipermeable membrane in fluid communication with a vent that automatically adjusts for pressure differentials by enabling gaseous diffusion between an environment external to the vented ink reservoir and the internal volume of the vented ink reservoir and concurrently inhibiting liquid diffusion therethrough, wherein at least a portion of the semipermeable membrane is angled other than parallel with respect to an operating level of the liquid ink within the vented ink reservoir. The remaining claims rejected, claims 2, 3, 5, 8, 13-21, 25, and 26, all require a semi-permeable membrane be associated with an ink container.

The Office action alleges that FIG. 1 of Iida discloses an embodiment that reads on Applicants' independent claim 1. However, Iida fails to disclose a single embodiment using a semi-permeable membrane, which is required in order to anticipate any of Applicants' claims. Thus, Iida cannot be considered an anticipatory reference as to Applicants' claims.

FIG. 1 of Iida discloses an ink container 1 that includes a lid member 13 with an atmosphere communicating hole 14. A recess 30 surrounds the communicating hole 14 on the side of the lid member 13 facing the inside of the ink container 1. The underside of the lid member 13 also includes a narrow groove 31 connecting the recess 30 with the communicating port 32, where a flexible membrane 33 is arranged over the recess 30 and groove 31 in a loose state.

In operation, the flexible membrane 33 receives the pressure of the ink and is moved towards the lid member 13. The flexible membrane 33 then comes into contact with a protrusion 14a defined by the recess 30 around the atmosphere communicating hole 14, so that the atmosphere communicating hole 14 is closed to prevent the ink from leaking therethrough. Nothing in the disclosure of Iida indicates that the flexible membrane 13 is semi-permeable. In fact, if the flexible membrane 13 of Iida were semi-permeable to allow substantial gaseous diffusion therethrough, there would be no need for the groove 31 or communicating port 32 as the gas would simply travel through the membrane. The only logical conclusion from the disclosure of Iida is that the flexible membrane is not semi-permeable. Thus, the disclosure of Iida fails to disclose a semi-permeable membrane and, therefore, fails to anticipate any of Applicants' claims as each claim includes the limitation of a semi-permeable membrane or mounting a semi-permeable membrane. In light of the foregoing, it is respectfully submitted that the instant rejection of claims 1-3, 5, 8, 13-21, 25, and 26 is improper. Reconsideration and withdrawal of the rejections of record for claims 1-3, 5, 8, 13-16, 19-21, 25, and 26 are respectfully requested.

35 U.S.C. § 103 Rejections

Claims 4, 7, 22, 23, 27, and 30 stand rejected under 35 U.S.C. 103(a) as being allegedly obvious over U.S. Patent No. 6,000,788 to Iida et al. ("Iida") in view of U.S. Patent No. 5,047,790 to Cowger et al. ("Cowger 2"), and in further view of U.S. Patent No. 4,794,409 to Cowger et al. ("Cowger 1"). This ground of rejection with respect to claims 4, 7, 22, 23, 27 and 30 has been overcome by the amendments to claims 1, 15, and 26.

Claims 1, 15, and 26 have each been amended to clarify that the ink containers, and the method of regulating pressure, include a semi-permeable membrane allowing for gaseous diffusion therethrough even when the semi-permeable membrane is contacted by liquid ink. Cowger 2, of these three cited references, is the only reference that discloses a semi-permeable barrier, however, this barrier does not provide for gaseous communication through the barrier when liquid ink comes in contact with the membrane because all of the available surface for gaseous communication is blocked by liquid ink. In direct contrast, Applicants' invention provides for gaseous transfer through the semi-permeable membrane even when a portion of the membrane is in contact with liquid ink. Thus, Applicants' claims 4, 7, 22, 23, 27 and 30 are patentably distinct over the cited references for at least this reason.

It should also be noted that, in contrast to the conclusions of the Office action, Cowger 1 does not disclose a plurality of alignment pins adapted to align the cap body with respect to the ink tank prior to mounting the cap body onto the ink tank as recited in Applicants' claim 30. It is respectfully submitted that the Examiner has mistakenly viewed the cross-sectional view of FIG. 2 of Cowger 1 as allegedly teaching a plurality of alignment pins, but in actuality Cowger 1 discloses no such structure. Cowger 1 provides a continuous flange that extends around the edge of the cap body that is seated within the container when the cap body is mounted to the ink tank. This continuous flange is simply a single flange, but it is not a plurality of alignment pins as recited in claim 30.

In light of the foregoing, it is respectfully submitted that claims 4, 7, 22, 23, 27, and 30 are patentably distinct from the cited references and are in condition for allowance. Reconsideration and withdrawal of the rejections of record for claims 4, 7, 22, 23, 27, and 30 are respectfully requested.

Allowable Subject Matter

Applicants graciously acknowledge and accept the determination of allowable subject matter recited in claims 9-12, 28, 29, and 31. However, in light of the arguments presented above, claims 9-12, 28, 29, and 31 remain in dependent claim form as the claims from which each depends is patentably distinct from the cited references.

Conclusion

In light of the foregoing, it is respectfully submitted that claims 1-5, 7-16, and 19-31 are patentably distinct from the references cited and are in condition for allowance. Reconsideration and withdrawal of the rejections of record are respectfully requested. The Commissioner is hereby authorized to charge any additional fees that may be required by this paper, or to credit any overpayment to Deposit Account 50-3072.

In the event that the Examiner wishes to discuss any aspect of this response, please contact the undersigned at the telephone number indicated below.

Respectfully submitted,

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